

The Water Bond

Report
2019



EXECUTIVE SUMMARY

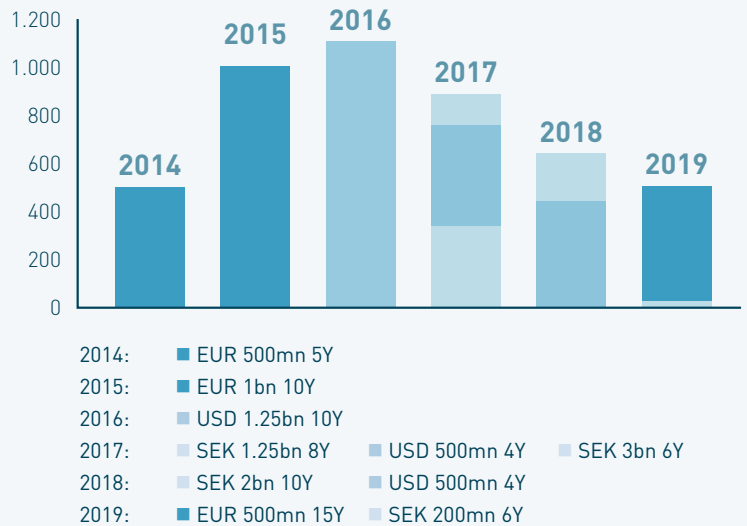
Company strategy and Water Bonds

As a bank of and for the public sector, NWB Bank has different values than organisations with purely commercial interests. NWB Bank's mission is to create long-term added value for society. That means that NWB Bank looks beyond ensuring a strong financial position and efficient business operations. NWB Bank is committed to a stable and sustainable financial sector that contributes to an economy that serves society and causes the least possible harm to the environment. Water Bonds are a perfect example of using financial instruments for the benefit of people and planet. NWB Bank started issuing Water Bonds in 2014, and now they are an indispensable part of the bank's business operations.

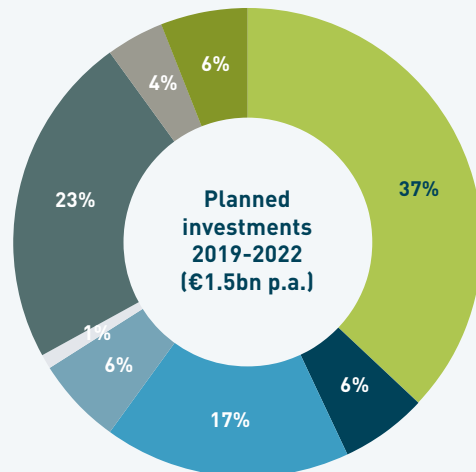
The proceeds from NWB Bank's Water Bonds are being used to provide loans to the Dutch water authorities. The water authorities are Dutch governmental bodies responsible for flood protection, water management and water quality. The projects that are financed with the proceeds of Water Bonds focus on (a) climate change mitigation, in the form of waterway management, (b) climate change adaptation, meaning investments in climate-resilient growth (flood protection and other flood defences, and pumping stations) or (c) biodiversity projects related to water rather than directly related to the climate (i.e. sanitation and dredging of waterbeds, water treatment, transport and cleaning of wastewater, and disposal of sewage sludge). The Norway-based Center for International Climate Research, Cicero, has branded the Water Bonds a 'dark shade of green'.

Breakdown of issuance

To date, NWB Bank has issued ten separate Water Bonds for a total of €4.7bn equivalent.



Portfolio breakdown



- Primary flood defences
- Other flood defences
- Water systems, quality and quantity
- Water-level management
- Sanitation and dredging of waterbeds
- Transport and treatment of wastewater
- Disposal of sewage sludge
- Miscellaneous

Key procedural aspects

- NWB Bank qualifies 90% of its lending to the water authorities as eligible assets.
- Projects financed by the water authorities adhere to the water authorities' mandate as defined in the Dutch Water Act (Waterwet).

Breakdown of KPIs / Green indicators

In the examples below, percentages from each category are selected.

| CLIMATE MITIGATION | 2011 | 2013 | 2015 | 2017 | 2018 |
|--|-------|-------|-------|-------|-------|
| Share of sustainable energy in total energy consumption | 90% | 99% | 103% | 109% | 111% |
| CLIMATE ADAPTATION | | | | | |
| Km of non-primary flood defences that comply with safety standards | 5.072 | 5.944 | 4.822 | 6.353 | 6.176 |
| INCREASE BIODIVERSITY VIA WATER QUALITY | | | | | |
| % of quantity of substances removed from wastewater | | | | | |
| Phosphates | 84.3 | 84.6 | 85.2 | 86.2 | 87.1 |
| Nitrates | 83.8 | 83.9 | 83.9 | 84.2 | 85.1 |
| Oxygen-binding substance | 92.0 | 92.5 | 92.5 | 92.7 | 92.7 |

Energy data for wastewater purification also shows that the water authorities reduced their carbon footprint by 67% since 2005 (= 357,000 tonnes of CO₂).

Carbon footprint

To measure the impact of CO₂, NWB Bank became a member of the Partnership for Carbon Accounting Financials (PCAF) in 2018. PCAF offers a framework that improves the financial sector's transparency and awareness of CO₂ emissions and a methodology for reporting.

At the end of 2019, NWB Bank already had its climate impact in scope for 93% of its total lending portfolio and 100% of the outstanding loans with the water authorities. NWB Bank was able to report the following figures for its water authority loan portfolio:

- Total outstanding loans covered: €6.501 million
- Attributed emissions water authorities: 239 Kton CO₂ eq.
- Emission intensity: 37 kton CO₂ eq. / € billion

Together with the Association of Dutch Water Authorities, NWB Bank is also initiator of the Water

Authorities' Climate Monitor. This annual study analyses the water authorities' contribution to energy and climate targets. The Climate Monitor is a key source of information for mapping the climate impact of the bank's credit portfolio. Eventually, the bank hopes to use its carbon footprint information to influence the environmental policy of its clients.

Transparency & reporting standards

NWB Bank reports annually on its CSR policy and its performance against the associated objectives, as well as on the Water Bond. The bank participates in the Dutch Ministry of Economic Affairs' Transparency Benchmark and has signed the ICSR agreement for the Dutch banking sector. When disclosing information, the bank follows:

- Global Reporting Initiative (GRI) guidelines
- the EU Directive 2014/95/EU on the disclosure of non-financial and diversity information

Index

| | |
|--|-----------|
| Executive Summary | 2 |
| 1. The Water Bond | 6 |
| 2. Water authorities | 7 |
| 3. Climate mitigation | 9 |
| - The Rijnland water authority's field next to a sewage treatment plant | 15 |
| - The water factory of the Vallei en Veluwe water authority | 16 |
| - Rijn en IJssel water authority produces Kaamera from wastewater | 17 |
| 4. Climate adaptation | 18 |
| - Scheldestromen water authority makes stone revetment of dredge spoil for dykes | 20 |
| - Drents Overijsselse Delta water authority reduces use of diesel | 21 |
| 5. Biodiversity | 22 |
| - The Smart Fish Lift of the Rivierenland water authority | 24 |
| 6. Investments 2019-2022 | 25 |
| 7. Appendix | 26 |
| Second opinion CICERO | 28 |





THE WATER BOND

NWB Bank has been issuing Water Bonds since 2014. Each year, the bank plans to issue at least one benchmark Water Bond. In 2019, NWB Bank issued a €500 million 15-year bond, in addition to a SEK 200 million bond with a maturity of six years. This means that overall it has issued ten separate Water Bonds for a total equivalent of €4.7 billion. Together with its Housing Bonds, NWB Bank has issued SRI bonds for a total equivalent of over €11 billion.

The response to these Water Bonds has been overwhelmingly positive. They are attracting huge interest from dedicated investors and are considered comprehensively green. In fact, the Norway-based Center for International Climate Research, Cicero, branded the Water Bonds a

‘dark shade of green’. They are also attracting the interest of ‘reverse roadshows’, where investors visit the bank to learn more about the activities of the water authorities and visit wastewater treatment sites, for instance. This has resulted in an annual event where the bank entertains approximately 20 investors for two days in the Netherlands. During those two days, the mainly European investors learn more about the work of the water authorities and housing associations. The transparency this brings is highly valued, and it has led to a closer cooperation between the bank and its clients. Overall, NWB Bank is sharpening its focus on sustainability. As part of the Annual Report 2019, NWB Bank will for the first time report on carbon emissions reflecting all balance sheet activities.





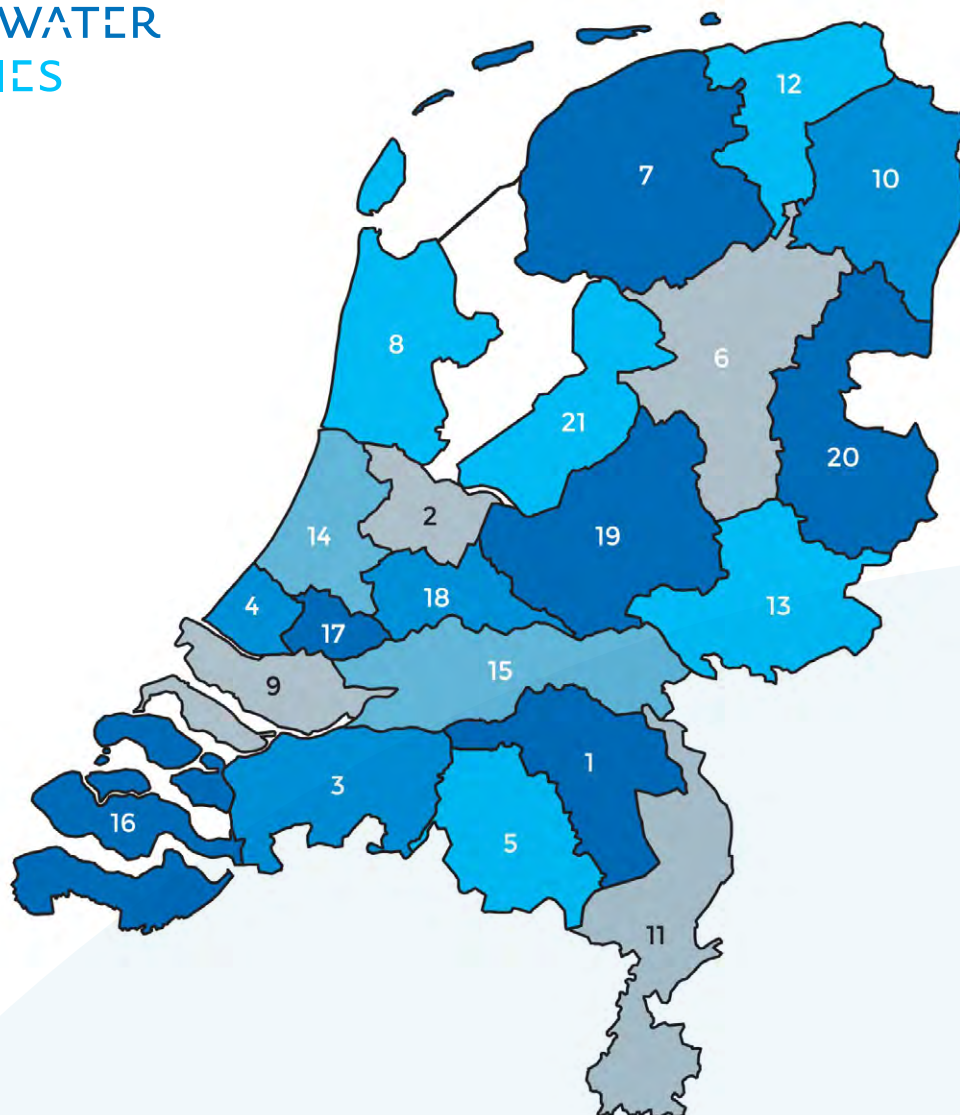
WATER AUTHORITIES

The Netherlands is a delta, almost two-thirds of which is below sea level. The country's low-lying topography means the western and northern parts need robust protection from the sea. Four major European rivers (the Rhine, Meuse, Scheldt and Ems) flow through the delta and into the North Sea. At times, they transport large quantities of water, which could potentially flood unprotected land along the way. At other times, the land can become so dry that the country's inhabitants need river water to go about their daily lives, work, conduct business and enjoy recreational activities. These are a few examples that highlight the importance of protecting ourselves from water and ensuring good water management. That is why most water-related tasks in the Netherlands have been allocated to separate entities, namely the water authorities. There are 21 water authorities, each of which ensures, in its respective region, adequate protection against water, the availability of high-quality water in the correct volumes, and the purification of wastewater that has been discharged into the sewage system by households and companies. The map below shows where the 21 water authorities carry out their tasks.

The water authorities run an extensive infrastructure to carry out these tasks. It consists of 17,500 km of flood defences, 235,000 km of waterways, 6,000 pumping stations and 323 wastewater treatment plants. Due to a range of changing circumstances, the water authorities have to constantly invest in this infrastructure. This is the only way it can withstand climate change, rising sea levels, subsidence, urbanisation and industrialisation. The investments made by the water authorities are largely financed by NWB Bank's Water Bonds.

The measures employed by the water authorities can be summarised by several keywords: climate mitigation, climate adaptation and improved biodiversity. Climate mitigation covers all measures taken by the water authorities to limit further climate change, such as investing in the production of sustainable energy. Climate adaptation refers to investments made by the water authorities in their infrastructure to anticipate the effects of a changing climate. The measures taken by the water authorities to improve biodiversity focus on making surface water clean and ecologically healthy. The remainder of this publication will discuss the development of the most important performance indicators for these water authorities in recent years.

DUTCH WATER AUTHORITIES



LEGEND

- | | |
|---|--|
| 1. Waterschap Aa en Maas | 12. Waterschap Noorderzijlvest |
| 2. Waterschap Amstel, Gooi en Vecht | 13. Waterschap Rijn en IJssel |
| 3. Waterschap Brabantse Delta | 14. Hoogheemraadschap van Rijnland |
| 4. Hoogheemraadschap van Delfland | 15. Waterschap Rivierenland |
| 5. Waterschap De Dommel | 16. Waterschap Scheldestromen |
| 6. Waterschap Drents Overijsselse Delta | 17. Hoogheemraadschap van Schieland en de Krimpenerwaard |
| 7. Wetterskip Fryslân | 18. Hoogheemraadschap De Stichtse Rijnlanden |
| 8. Hoogheemraadschap Hollands Noorderkwartier | 19. Waterschap Vallei en Veluwe |
| 9. Waterschap Hollandse Delta | 20. Waterschap Vechtstromen |
| 10. Waterschap Hunze en Aa's | 21. Waterschap Zuiderzeeland |
| 11. Waterschap Limburg | |

3

CLIMATE MITIGATION: A NEW APPROACH TO ENERGY AND RAW MATERIALS

The water authorities witness the consequences of climate change every day in their work. That is why, in addition to adapting their infrastructure to climate change, they are taking many other measures – i.e. climate mitigation – to prevent further climate change. As part of their activities, the water authorities are involved in producing more efficient energy and closing the raw materials cycle. Producing renewable energy, reducing CO₂ emissions and recovering raw materials aligns with the water authorities' aim to contribute to the Netherlands' National Climate Agreement, the terms of which were agreed upon in 2019.



The National Climate Agreement outlines how the Netherlands plans to comply with the targets set in the Paris Agreement (12 December 2015). In the National Climate Agreement, the water authorities set 2025 as a target for becoming energy-neutral. The water authorities' annual climate monitor publication, 'Klimaatmonitor waterschappen', reports on the progress being made towards this target. Together with the Association of Dutch Water Authorities, NWB Bank is initiator of this annual study. Many of the results published in this chapter were derived from the [climate monitor for 2018](#) (only in Dutch).

Use of sustainable energy

Organisations can already help mitigate climate change simply by using as much sustainably generated energy as possible. The data in the table below show that the water authorities actively pursue this goal. After 2013, the share of sustainable energy at the water authorities has even risen above 100%. Anything beyond that point means the water authorities are supplying sustainable energy that they produced to third parties.

| | 2011 | 2013 | 2015 | 2017 | 2018 |
|---|-------|-------|--------|--------|--------|
| Share of sustainable energy in total energy consumption | 90.3% | 98.6% | 102.6% | 109.4% | 111.2% |

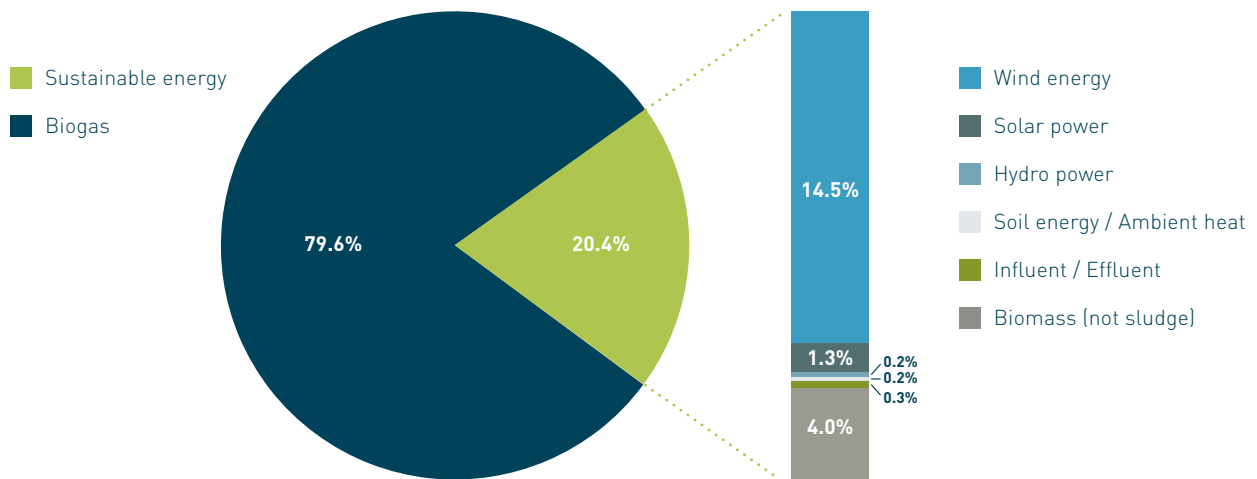
Self-generated energy

Not only is the energy that the water authorities buy almost exclusively from sustainable sources, but in carrying out their core tasks they also generate as much sustainable energy as possible themselves. The purification of wastewater is one process that is particularly suited to this goal. Bacteria help to convert the sludge produced during this process into biogas, which can then be used to generate electricity. It can also be used as fuel to power personal and transport vehicles.

Today, the water authorities are among the largest producers of biogas in the Netherlands. The figures below show how their biogas production has grown since 2011.

| | 2011 | 2013 | 2015 | 2017 | 2018 |
|---|--------|--------|--------|--------|--------|
| Quantity of biogas produced in millions of m ³ | 102.5% | 111.6% | 112.2% | 119.6% | 120.5% |

As well as biogas, the water authorities use their sites and assets to produce energy from other natural sources, such as wind, the sun, hydropower and thermal energy. The data in the following table show the percentage of sustainable energy produced by the water authorities in 2018 by source.



The following table shows the development of the share of total energy consumption that is self-generated by the water authorities. As mentioned, the water authorities want to be completely energy-neutral by 2025. Their interim goal is to self-generate 40% of the energy they consume in 2020. The figures in the table show that they are well on their way to achieving this interim goal.

| | 2011 | 2013 | 2015 | 2017 | 2018 |
|---|-------|-------|-------|-------|-------|
| Share of own production in total energy consumption | 25.0% | 27.5% | 29.7% | 33.9% | 36.2% |

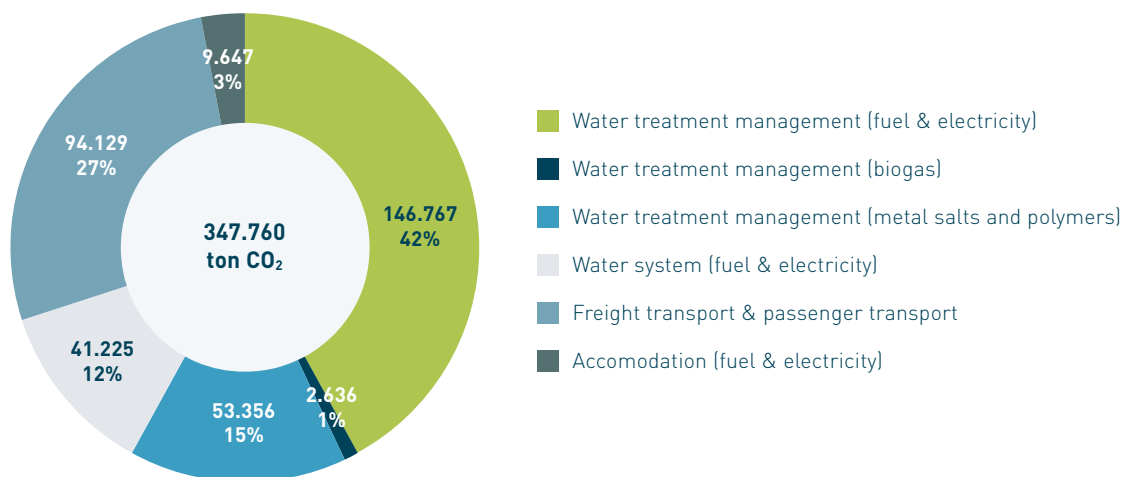
Not only do the water authorities generate their own energy, they also make their sites and resources available to third parties to produce energy. In 2018, the scale of energy production by other citizen cooperatives and companies was equivalent to 5.7% of the energy consumption by all water authorities combined. It was 5% in 2017.

Recently, the water authorities became actively involved in 'Aquifer thermal energy'. They are working with municipalities, energy companies and housing associations, among others, to explore the large-scale use of heat from sewage and surface water. One example is designing district heating grids for neighbourhoods that do not use gas. NWB Bank is one of the partners of the collaboration, which is called the Green Deal Aquathermie.

Carbon footprint

A carbon footprint, also referred to as an ecological footprint, shows the effect a person or organisation has on the natural environment. The water authorities measure their carbon footprint by the level of CO₂ emissions caused by their energy consumption. The smaller the carbon footprint, the smaller the negative impact of the CO₂ emissions on the habitat. Based on their energy consumption and its configuration, the water authorities appear to have reduced their carbon footprint by about 67% since 2005 by generating biogas and procuring green electricity. That corresponds to a 357-kiloton reduction of CO₂. The water authorities' total carbon footprint in 2018 was 347.8 kilotons of CO₂, which is equivalent to the carbon emissions of about 43,500 households.

The following figure shows a breakdown of the carbon footprint according to the water authorities' various activities.



Closing cycles: producing raw materials and sustainable procurement

The world's population is growing rapidly, driving the depletion of our natural resources, so it is essential that we use our raw materials more efficiently. To address this problem, a national Raw Materials Agreement was concluded in the Netherlands in January 2017, which was also signed by the water authorities. The aim of this agreement is to ensure the Netherlands has a 100% circular economy by 2050. The water authorities aim to achieve this goal by extracting or recovering sustainable energy and valuable (raw) materials from waste flows. They are using innovative techniques to recover substances such as phosphorus, cellulose, bioplastics and alginate from wastewater, as well as to turn the biomass produced during processes such as waterway maintenance into paper and composite materials. The water authorities are increasingly converting their wastewater treatment plants into 'resource factories'.

In the meantime, the 2017 Raw Materials Agreement has been further articulated with a number of new points.

For example, the agreement contains five transition agendas for five sectors and chains that are important to the Dutch economy but which also harm the environment. The sectors in question are the 'Biomass and food', 'Plastics', 'Manufacturing industry', 'Construction' and 'Consumption goods' sectors. The transition agenda outlines how a given sector can become circular by 2050 and which interventions are necessary to achieve that goal. The water authorities are actively participating in the 'Biomass and food' and 'Construction' agendas.

Another point in the Raw Materials Agreement concerns the recent focus on sustainability and circularity within chains. This is important to the water authorities because they spend more than €2 billion on goods and services in the market each year. By applying sustainability criteria in their tendering and procurement procedures, they also help to create closed cycles. The water authorities laid down their agreements with other authorities and the business sector about these criteria in the Manifesto on Socially Responsible Procurement.

A third point in the Raw Materials Agreement concerns major infrastructural projects. Major gains in sustainability can be made in this area because of the vast human resources, materials and machines used in these projects. By signing the Green Deal for Sustainable Civil and Hydraulic Engineering 2.0, the water authorities have committed themselves to the goal of naturally and fully embedding sustainability in all infrastructural programmes and projects in 2020.

The Climate Agreement in practice

The Climate Agreement is the Dutch version of the international Paris Agreement (2015) and contains a cohesive package of measures that aim to reduce carbon emissions by at least 49% by 2030 compared with the levels in 1990. Two programmes were launched in 2019 to help achieve this goal: the National Programme for Regional Energy Strategies, and the Aquifer Thermal Network. The water authorities played a key role in getting these programmes up and running, and both programmes' offices operate from the headquarters of the Association of Dutch Water Authorities.

30 Regional Energy Strategies

To implement major points of the Climate Agreement, the Netherlands has been divided into 30 energy regions, referred to as RES regions (RES = Regional Energy Strategy). The municipalities, provinces and water authorities in the RES region in question have to develop – with social partners, grid operators, industry and, where possible, residents – regionally supported options for generating sustainable electricity, making the transition to a climate-neutral heat supply in the built environment, and building the required storage and energy infrastructure. The RES aims to spatially integrate the production of renewable energy, (residual) heat sources, and the associated infrastructure in a diligent manner. The National Programme for RES helps the regions optimise their strategies, for example by developing and sharing knowledge, unlocking and analysing data, providing calculation methods, and making guidelines available.

In its RES, each region has to propose how to sustainably generate electricity and how to distribute heat across the region. Regarding electricity, there is a national agreement that all Regional Energy Strategies should add up to at least 35 TWh by 2030. The regions are also encouraged to incorporate small-scale solar-on-rooftop projects in their RES. RES regions have to indicate in their 'Regional Structure for Heating' how the availability of heating sources, the demand for heating and the infrastructure at the regional level can be linked together and what their target is.

The regions submit versions of their RES to the National Programme for RES at different moments:

- the draft RES no later than 1 June 2020; and
- the 'RES 1.0' no later than 1 January 2021.

Aquifer thermal energy

Based on the Climate Agreement, the Netherlands is designing a built environment suited to a low-carbon future. Alternative energy and heat sources will be needed to achieve this aim. The water system (surface, drinking, waste and sewage water) is a major source of heat and cold, and studies show that this source can make a major contribution to the transition in heat supply. The Association of Dutch Water Authorities and the Directorate-General for Public Works and Water Management have taken the initiative to set up a network that will explore the potential and increase the awareness of aquifer thermal energy. Many parties including NWB Bank will work together in the Aquifer Thermal Network to accelerate the heat transition. The network will ensure that:

- the participating parties share knowledge and experiences about aquifer thermal energy with each other;
- a knowledge and innovation agenda will be developed and implemented;
- attention will be drawn to new initiatives related to aquifer thermal energy; and
- best practices in the area of governance, financing and organisation related to the use of aquifer thermal energy will be made widely accessible.

THE RIJNLAND WATER AUTHORITY'S FIELD NEXT TO A SEWAGE TREATMENT PLANT



In September 2018, the Rijnland water authority began to use an unused field located next to the Katwijk sewage treatment plant. It installed 5,572 solar panels on it, which are expected to generate 1,365,000 kWh of electricity a year. This is the equivalent to the energy needs of 450 households. It also covers approximately 30% of the total energy needs of the sewage treatment plant. Even though the overall yield is insufficient to

run the entire plant, 50% to 60% of it is returned to the grid. This is possible because sometimes more energy is generated during the day than can be immediately used. A contractor signing a performance agreement will maintain the pasture for 15 years. The annual reduction in carbon emissions achieved on the field will amount to approximately 886 tonnes of CO₂.

THE WATER FACTORY OF THE VALLEI EN VELUWE WATER AUTHORITY



Most sewage treatment plants discharge wastewater into the surface water after it has been purified. This has essentially enhanced the quality of the water but, given the present and future shortage of fresh water, we could use other techniques to put purified water to even more use. The Vallei en Veluwe water authority is going to employ a new purification concept at the Water Factory in Wilp to produce crystal clear water

that can be used in nature, agriculture or industry. Instead of purifying water, the Wilp Water Factory will refine water. The water factory will not only produce clean water, it will also extract raw materials which will be processed into valuable products. As a result, no more methane, CO₂ or nitrous oxide will be produced. The Wilp Water Factory will begin operations in 2020.

RIJN EN IJSSEL WATER AUTHORITY PRODUCES KAUMERA FROM WASTEWATER



The Dutch water authorities are working with scientists and industry to convert their sewage treatment plants into 'factories' that produce clean water, clean energy and valuable raw materials. One of the raw materials the water authorities are extracting is the biopolymer Kaumera. Together with its partners, the Rijn en IJssel water authority in Zutphen has built the first raw materials factory in the world, where Kaumera will be extracted on a larger scale. Kaumera is a sustainable alternative for chemical raw materials and can be used

as a coating for seeds and fertiliser pellets, as a glue or binding agent, and in many other ways. The Vallei en Veluwe water authority is building a similar plant in Epe. The acquired knowledge will make it possible to convert more sewage treatment plants in the world into raw material factories that generate much less waste, reuse wastewater, produce a biodegradable substance and thus save energy, reduce carbon emissions, and cut costs.



4

CLIMATE ADAPTION: FLOOD PROTECTION AND MODIFICATION OF THE WATER SYSTEM

The rapidly changing climate is the water authorities' top priority. Climate change has increased the likelihood of flooding, excess water during extreme peak showers, long periods of drought and heat stress in cities. The water authorities are adapting their infrastructure to address these new climatic conditions. Increasingly, they are joining forces with other parties, such as public authorities, residents, companies and social organisations.

Flood protection

Two-thirds of the Netherlands is situated below sea level. Approximately ten million people live in that part of the country, and 70% of the national income is earned there. Without solid flood defences, a large part of the Netherlands would be regularly submerged, endangering the lives of inhabitants and causing significant damage to buildings, the infrastructure and the economy. To prevent all of this from happening, the water authorities manage and maintain more than 3,200 km of primary flood defences, which protect against flooding from the sea, the major rivers and the IJsselmeer and Markermeer lakes, in addition to 14,000 km of other types of flood defence, which provide protection from other waterways.

New statutory safety standards were introduced to the primary flood defences in 2017. These standards essentially reduce the likelihood of anyone drowning due to flooding to 1 in 100,000 per year. If a flood defence fails to comply with the standard, this does not automatically mean there is an acute danger of flooding.

The defence will have to be strengthened, however, with a view to the future. All primary flood defences, as well as the 256 locks and pumping stations located in these structures, will be assessed based on the new standards in the period 2017-2023. As the assessment has only recently begun, it is not yet possible to provide any information on the results.

A safety standard has not been introduced for all of the other (=non-primary) flood defences yet. The following table shows the length of the other flood defences that comply with safety standards.

| | 2011 | 2013 | 2015 | 2017 | 2018 |
|---|-------|-------|-------|-------|-------|
| Km of non-primary flood defences that comply with safety standard | 5.072 | 5.944 | 4.822 | 6.353 | 6.176 |

The reason that the number of kilometres which met the standard in a given year is lower than in a previous year is that stricter requirements were introduced over the years; for example, flood defences that met the applicable standard in 2013 no longer complied on the basis of the stricter standard in 2015.

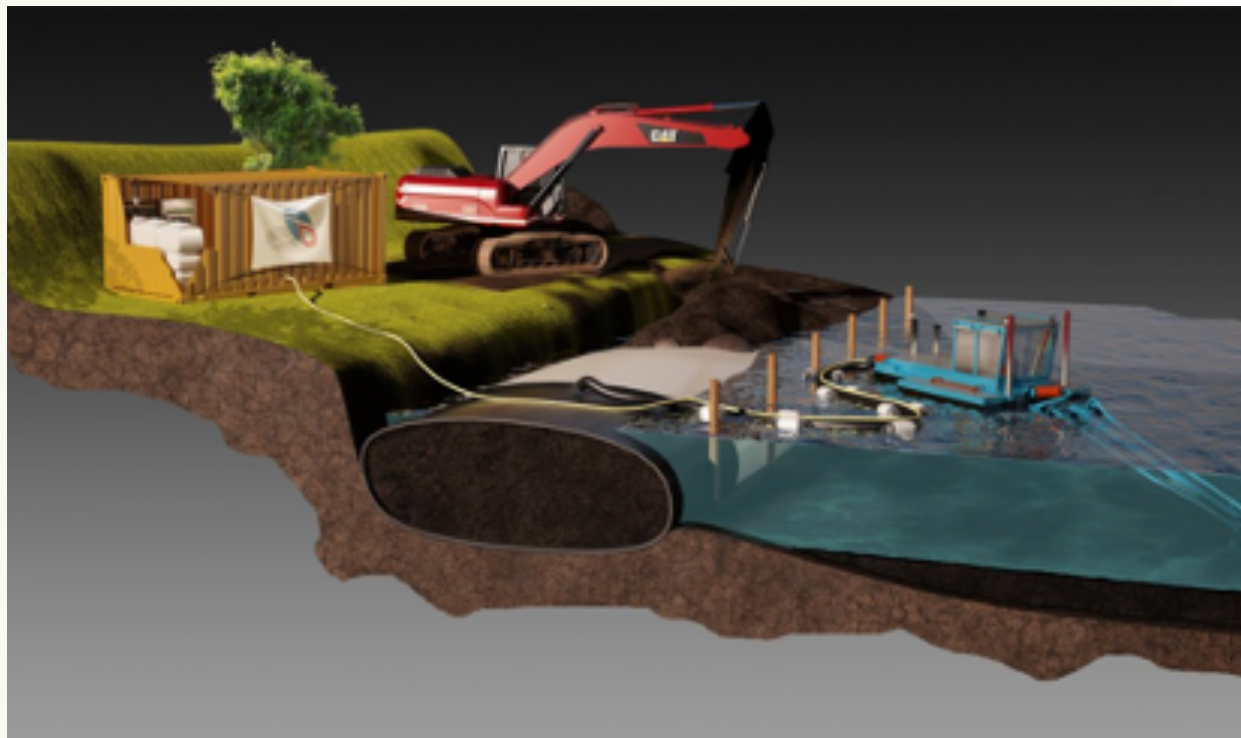
Modifying the water system

As managers of a large percentage of the Netherlands' surface water, ensuring an adequate water supply is one of the water authorities' core tasks. The correct supply of water is vital for agriculture, outdoor recreation, nature, the collection of drinking water, industry, and shipping and fishing. That means preventing a surplus of water during wet spells and a shortage of water during dry spells. The prevailing effects of climate change are making this an increasingly difficult task. The water authorities are introducing measures to adapt their water systems to the changing circumstances. For example, they are creating new water storage areas, increasing the capacity of existing water systems and expanding the number of pumping stations.

The first national agreement to prepare the Netherlands for changing circumstances was signed in 2003. At the time, the central government, the provinces, the water authorities and the municipalities laid down standards in the National Administrative Agreement on Water to ensure maximum prevention of 'unacceptable flooding'. Under this plan, the provinces introduced standards for each regional water authority, and the water authorities have put in place measures to ensure their regions comply with these standards. The table below shows that the percentage of regions managed by the water authorities that comply with the standards has risen in recent years as well.

| | 2011 | 2013 | 2015 | 2017 | 2018 |
|--|-------|-------|-------|-------|-------|
| Percentage of regions managed by water authorities that comply with flooding standards | 99.0% | 99.1% | 99.1% | 99.2% | 99.4% |

SCHELDESTROMEN WATER AUTHORITY MAKES STONE REVETMENT OF DREDGE SPOIL FOR DYKES



In recent decades, the outer sections of many Dutch dykes were armoured with concrete to withstand the waves. This was quite an expensive solution, which has the added disadvantage that the production of concrete is not sustainable, as the raw materials have to be transported over long distances and its production consumes a relatively large amount of energy. The Scheldestromen water authority recently

began to use cladding material made of sludge released during maintenance of the waterways. Transporting and processing the sludge for waste processing purposes is usually relatively costly. Using the sludge to make cladding components gives the sludge, normally considered 'waste material', a useful purpose and reduces the cost of reinforcing the dykes.

DRENTS OVERIJSSELSE DELTA WATER AUTHORITY REDUCES USE OF DIESEL



The Drents Overijsselse Delta water authority is reducing emissions caused by fuel consumption from transport vehicles and maintenance equipment in several ways. They have held courses, for example, to reduce unnecessary idling in transport vehicles and machines. In addition, the water authority's machinery now runs on a renewable green diesel called Hydrotreated Vegetable Oil (HVO). The advantage of this biodiesel is that the combustion in the engine is just like the combustion of fossil diesel. Engines do not need to be modified to use this product either.

The water authority is also requiring companies that work for them to use HVO as a fuel for their business activities. Finally, the water authority has indicated a preference for buying new vehicles that are powered by electricity or hydrogen. The water authority hopes that this will help to dramatically reduce its carbon emissions in the coming years.

This measure resulted in an estimated overall saving of more than 6,500 litres of diesel and 21,000 kg of CO₂ in 2018.

5

WORKING ON BIODIVERSITY BY IMPROVING WATER QUALITY: WASTEWATER PURIFICATION AND MEASURES FOR SURFACE WATER

The water authorities are also responsible for ensuring surface water is clean and ecologically healthy. Indeed, they have introduced measures that ensure a high quality of water. This is important for water users such as the agricultural sector, anglers, recreational boaters and swimmers, but also for the plants and animals that live in the water. Healthy biological and chemical conditions increase biodiversity. The water authorities have introduced two types of measure:

- purifying wastewater produced by the 7.9 million households and nearly 1.8 million businesses in the Netherlands; and
- introducing measures for surface water that improve living conditions in and around the water.

Purifying wastewater

The water authorities use their 323 wastewater purification plants to ensure wastewater is sufficiently clean to be drained into the surface water without any adverse effects on water quality. Wastewater purification focuses mainly on removing the substances in wastewater that are most harmful to surface water. Those substances include phosphate and nitrate compounds, as well as oxygen-binding substances. Under European legislation, 75% of both the phosphates and the nitrates must be removed from wastewater, whereas a minimum of 90% applies to oxygen-binding substances in the Netherlands.

The following table shows that the quality of wastewater purification in relation to the standards is high and has further improved in recent years.

| % of quantity of substances removed from wastewater | 2011 | 2013 | 2015 | 2017 | 2018 |
|---|------|------|------|------|------|
| Phosphates | 84.3 | 84.6 | 85.2 | 86.2 | 87.1 |
| Nitrates | 83.8 | 83.9 | 83.9 | 84.2 | 85.1 |
| Oxygen-binding substance | 92.0 | 92.5 | 92.5 | 92.7 | 92.7 |

Measures for surface water

Examples of measures introduced by the water authorities to improve the quality of surface water include the creation of environmentally friendly shores and banks, the removal of polluted waterbeds and the construction of weirs passable to fish. An indicator that reflects the quality of the surface water is the percentage of bathing water locations that comply with the European Bathing Water Directive. There were 488 officially designated bathing areas in waters managed by the water authorities in 2018. That year, 96% of these locations consistently complied with the standards in the directive. The following table shows the figures since 2012.

| | 2011 | 2013 | 2015 | 2017 | 2018 |
|---|------|------|------|------|------|
| Percentage of bathing water locations that comply with the European Bathing Water Directive | 92% | 95% | 97% | 96% | 96% |

THE SMART FISH LIFT OF THE RIVIERELAND WATER AUTHORITY



Climate change, subsidence and rising sea levels are forcing water authorities to build more and more facilities in their water systems. These facilities act as barriers in fish migration routes. This is one of the reasons why the fish stock and the number of species have decreased, with some species even facing extinction. For years, the water authorities have built fish passages near these facilities to improve the situation, but research has revealed that many fish passages are not up to standard or do not work at all.

Many traditional fish passages are clogged with waste, closed or too open, and they rarely have the right flow rate for passing fish. The Rivierenland water authority was the first to start using a new kind of fish passage, the 'Smart Fish Lift', that circumvents the problems encountered by traditional fish passages. The smart fish passage is round and monitors migrating fish and the water quality. It can also regulate the flow rate and automatically set the correct one for each passing fish.



INVESTMENTS 2019-2022

The water authorities have to constantly invest large sums of money to ensure that their infrastructure can withstand climate change, rising sea levels, subsidence, urbanisation and industrialisation. The amount for the period 2019-2022 is almost €1.5 billion a year. The table below shows how this amount is spread across the water authorities' various responsibilities. NWB Bank's Water Bonds play a key role in funding these investments.

| | In million € | In % |
|---------------------------------------|--------------|------|
| Planning | 15 | 1% |
| Primary flood defences | 545 | 37% |
| Other flood defences | 90 | 6% |
| Water-level management | 85 | 6% |
| Sanitation and dredging of waterbeds | 20 | 1% |
| Water systems, quality and quantity | 245 | 17% |
| Transport and treatment of wastewater | 340 | 23% |
| Disposal of sewage sludge | 55 | 4% |
| Roads | 15 | 1% |
| Waterways | 5 | 0.3% |
| Other | 50 | 3% |



APPENDIX

| Water Bonds issued in 2018 | |
|----------------------------|-------------|
| SEK 200 mln 6 years | 18.600.000 |
| EUR 500 mln 15 years | 500.000.000 |

| Use of proceeds | |
|-------------------------------|----------------------------------|
| Total loans | 576.250.000 |
| Use of proceeds | 518.625.000 (90% of total loans) |
| Balance of non-disbursed cash | 0 |

| Use of Proceeds | | | | | |
|-----------------|------------|-------------------|------------|------------|-------------------|
| Trade date | Notional | Maturity in years | Trade date | Notional | Maturity in years |
| 2018-10-26 | 12.000.000 | 13 | 2018-12-17 | 5.000.000 | 2 |
| 2018-11-12 | 20.000.000 | 3 | 2018-12-17 | 5.000.000 | 3 |
| 2018-11-12 | 15.000.000 | 10 | 2018-12-18 | 20.000.000 | 6 |
| 2018-11-13 | 16.000.000 | 3 | 2019-02-21 | 30.000.000 | 30 |
| 2018-11-22 | 15.000.000 | 20 | 2019-03-13 | 10.000.000 | 10 |
| 2018-12-12 | 10.000.000 | 14 | 2019-04-09 | 5.000.000 | 3 |
| 2018-12-14 | 15.000.000 | 2 | 2019-04-09 | 5.000.000 | 4 |



| Use of Proceeds | | | | | |
|-----------------|------------|-------------------|------------|------------|-------------------|
| Trade date | Notional | Maturity in years | Trade date | Notional | Maturity in years |
| 2019-04-10 | 10.000.000 | 30 | 2019-08-20 | 25.000.000 | 41 |
| 2019-04-26 | 20.000.000 | 30 | 2019-08-29 | 5.000.000 | 8 |
| 2019-05-08 | 10.000.000 | 25 | 2019-08-29 | 5.000.000 | 9 |
| 2019-06-06 | 15.000.000 | 15 | 2019-08-29 | 5.000.000 | 10 |
| 2019-06-06 | 5.000.000 | 20 | 2019-08-29 | 15.000.000 | 10 |
| 2019-06-17 | 10.000.000 | 1 | 2019-08-29 | 5.000.000 | 11 |
| 2019-06-17 | 7.000.000 | 1 | 2019-09-10 | 20.100.000 | 30 |
| 2019-06-17 | 9.000.000 | 2 | 2019-10-17 | 30.000.000 | 20 |
| 2019-06-17 | 20.000.000 | 30 | 2019-10-21 | 25.000.000 | 25 |
| 2019-06-19 | 10.000.000 | 20 | 2019-10-30 | 30.000.000 | 21 |
| 2019-07-10 | 82.150.000 | 25 | 2019-10-30 | 30.000.000 | 22 |

SECOND OPINION CICERO

Overall, NWB Bank's green bond framework and the governing laws of the regional water authorities provide a holistic and sound framework for climate friendly investments. In the Netherlands, water management is a matter of survival. More than fifty percent of the country would be under water if the infrastructure, knowledge and institutional structure was not up to standard. Water resources and flood protection are managed by 21 autonomous, publicly owned, regional water authorities.

The water authorities integrate a range of environmental impacts in their project plans, and perform environmental impact assessments on all large projects. The green bond framework lists eligible projects that are generally supportive of the dual objective of promoting a transition to low-carbon and climate-resilient growth, and improving biodiversity. NWB Bank provides regular and transparent reports to investors and the public. The regional water authorities take an integrated approach to climate change and biodiversity projects, and the bond framework does not include any biodiversity projects that would have a negative impact on the climate. The water authorities are public entities subject to regular and comprehensive reporting at the national and EU level. NWB Bank reports on environmental impacts and carbon footprint of its activities, including activities financed by the green bond, according to the GRI Global Reporting Framework.

Proceeds from NWB Bank's Green Bonds can also be used for re-financing purposes. The amount of new loans will be reported by NWB Bank in the annual investor letter. Based on an overall assessment of the project types that will be financed by the green bonds and governance and

transparency considerations, NWB Bank's Green Bond Framework gets a Dark Green shading.

The framework includes elements that are not dark green such as roads, pumping stations running on fossil fuel and fossil fuel transportation related to treatment and water management. We recommend that NWB Bank supplements their emission reports with additional reporting on methane emissions (from treatment), and also that NWB Bank in their investor letter makes impact information easier accessible for investors.



°CICERO
Dark Green

Disclaimer

THE INFORMATION INCLUDED IN THIS REPORT IS BEING MADE AVAILABLE TO YOU FOR INFORMATION PURPOSES ONLY.

This report is based on information provided by Nederlandse Waterschapsbank N.V. (the “Company”) and other publicly available information as indicated herein. The information contained in this report does not constitute or form part of any offer for sale or subscription of or solicitation or invitation of any offer to buy or subscribe for any securities which the Company may issue in the United States or any other jurisdiction (the “Securities”) nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever. Any decision to invest in or acquire Securities must be based wholly on the information contained in an offering document or prospectus (the “Offering Document”) issued or to be issued by the Company in connection with any such offer and not on the contents hereof and this report should not be considered as a recommendation by the Company that any recipient of this report should subscribe for or purchase any Securities in any jurisdiction in which such offer, sale or invitation is not authorized or to any person to whom it is unlawful to make such an offer, sale or invitation. This report does not contain all relevant information relating to the Company or its Securities, particularly with respect to the risks and special considerations involved with an investment in the Securities of the Company, and is qualified in its entirety by reference to the detailed information which will appear in the

Offering Document. No Securities have been or will be registered under the U.S. Securities Act of 1933, as amended (the “Securities Act”). Accordingly, any Securities will only be issued in the United States pursuant to an exemption from or in a transaction not subject to the registration requirements of the Securities Act.

Statements in this report that are not historical facts are “forward-looking statements”, including forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are based on intent, belief or current expectations of future events of the Company’s management and are subject to risks, uncertainties and assumptions. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, the actual results of the Company may vary materially from those expressed in or implied by the forward-looking statements. Given these risks and uncertainties, you are cautioned not to place substantial reliance on forward-looking statements, which are made only as of the date of this report. For a discussion of some of the important factors that could cause the Company’s results to differ from those expressed in or implied by the forward-looking statements, please be referred to the Offering Document that will be delivered in connection with any Securities offering. The Company disclaims any obligation to update, or to announce publicly any revision to, any of the forward-looking statements contained in this report.

CONTACT INFORMATION

Tom Meuwissen

General Manager Treasury

tel: +31 70 416 62 70

e-mail: tom.meuwissen@nwbbank.com

Nederlandse Waterschapsbank N.V.

Rooseveltplantsoen 3

2517 KR The Hague

The Netherlands

P.O. Box 580

2501 CN The Hague

The Netherlands